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Soil and Water Conservation News

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Comments: From the SCS Chief

Volunteers—An Invaluable Resource

Last year, almost 700 Soil Conservation Service volunteers did a wide variety of jobs to advance natural resource conservation. This year, SCS is looking to recruit many more highly qualified volunteers to help achieve soil and water conservation goals.

Volunteerism is good for SCS and good for volunteers.

Volunteers enable SCS to reach many more people with its conservation message. Volunteers can help schools with conservation education programs, talk to clubs and organizations, operate displays at fairs and meetings, and make initial contacts with farmers and ranchers.

Volunteers can help SCS technicians do survey and layout work for conservation practices in the field, or do clerical work back in the office. They can help collect data for resource inventories and enter data into computer files. Volunteers can develop public information materials such as slide/tape shows, articles for periodicals, and photographs for many uses. In short, volunteers can provide a wide range of services.

One well-trained volunteer can train many more.

Although they are not paid, SCS volunteers have legal and insurance protection just as any employee. And, volunteers can gain much from their experience.

Both government and private employers consider volunteer work to be qualifying experience for comparable positions. Volunteers often make highly visible contributions to the landscape in their communities, and they always learn more about the places where they live.

When volunteers help teachers work with pupils on outdoor classroom conservation projects, for example, they help give youngsters a head start in learning about resource conservation that will be needed in future years.

Above all, SCS volunteers gain the satisfaction of carrying out some of the most necessary work in this country.

Let's give many more citizens a chance to feel as good as we do about achieving soil and water conservation.



Cover: Concrete-filled fabric and willows protect erosion-threatened lakeshore in Pennsylvania's Pymatuning State Park as part of a demonstration project of the Penn Soil Resource Conservation and Development (RC&D) Area. Articles about this and other RC&D projects begin on page 4. (Photo by Lynn Sanderson, manager, Crawford County Conservation District, Meadville, Pa.)

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New England States Strengthen Volunteer Program

Soil Conservation Service employees from Maine, New Hampshire, Vermont, Massachusetts, Connecticut, and Rhode Island participated in a 2-day workshop in February to learn how to strengthen the volunteer program in their States.

The 30 workshop participants included SCS employees, conservation district employees, and volunteers.

David Musselman, SCS State conservationist in New Hampshire, hosted the workshop. Judy Johnson, SCS public affairs specialist and liaison to the Soil Conservation Society of America in Ankeny, Iowa, led the training.

The multi-State workshop covered how to develop specific job descriptions for volunteers, how to recruit volunteers, how to supervise volunteers, and how to make the best use of volunteers' donated time and efforts.

"A successful volunteer program requires an accurate assessment of the kinds of jobs volunteers can fill, standard procedures for recruiting volunteers and maintaining records of their time and accomplishments, and recognition for their work," said Johnson. "Volunteers need to feel that they are making a worthwhile contribution."

A long-time SCS volunteer in the New Hampshire State office, Ray Vranicar, a retired U.S. Navy commander, did the local planning for the workshop. SCS presented him with a 3-year length of volunteer service award at the workshop.

All of the States reported good experiences in using volunteers for various jobs in the past, and they recognized the need to recruit more. By April, all six New England States had formed volunteer coordinating committees to help plan and carry out a strong volunteer program.

The State volunteer coordinators report good success with advertising specific volunteer positions in local newspapers and local organizations' newsletters and at colleges and high schools. They are also working with organizations of retired persons.

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Speaking Tips for Volunteers

The number of Soil Conservation Service volunteers is growing steadily. Many SCS volunteers will be speaking on soil and water conservation to school groups, clubs, and other organizations. Here are a few tips that volunteers can use in planning their presentations:

- Cover material that you're familiar with and comfortable in discussing. Consult SCS staff or a knowledgeable volunteer.
- Talk with the teacher or leader of the club or organization ahead of time to discuss what the presentation will include. Discuss equipment needs.
- Anticipate questions that the audience might ask and prepare answers.
- Take postcards to the presentation. If people ask questions that you're unable to answer, ask them to write their address and question on one of the postcards. You can mail them an answer later.
- Practice your presentation in front of a mirror or with friends or family.
- Arrive at the school or meeting room in plenty of time to set up displays and audiovisual equipment.
- Remember, the audience wants to hear what you have to say. That's why they invited you.

Adapted from the April 1986 newsletter for the Agriculture in the Classroom program sponsored by the U.S. Department of Agriculture.

Iowa Farm Group Volunteers to Help Farmers Sign Up for Conservation

One way a citizen or group can support soil conservation is to ask what can be done locally. That's what Mary Zirkelbach did.

Zirkelbach, 1984 chairwoman of the Farm Bureau Women's Committee in Jones County, Iowa, went to the local field office of the Soil Conservation Service in Anamosa and asked what her organization could do to help. Ronald Williams, SCS district conservationist, welcomed the offer of assistance and suggested that the committee help sign up farmers and others as cooperators with their local soil conservation districts.

Zirkelbach liked the idea and presented it at the annual meeting of District 6 of the Farm Bureau Women's Committee. She won approval to conduct the program in all 11 counties in the district. Committee members in each county then began meeting with various groups to sign up new cooperators.

The goal for each county was 5,000 acres, and this goal was exceeded in six of the counties. In all, committee members signed up the owners of 71,849 acres. The program is being continued this year.

Jody Christiansen,
information intern, SCS, Des Moines, Iowa

RC&D: The Rest of the Story

Next year will mark 25 years of rural development activities under the Resource Conservation and Development (RC&D) Program. The RC&D Program is an effort by the U.S. Department of Agriculture, under the leadership of the Soil Conservation Service, to improve the economic, social, and environmental life of rural communities through the development and wise use of local resources.

In each area that it serves, the RC&D Program is administered by councils made up of volunteers and representatives from local units of government and other sponsoring agencies. Each RC&D council is assisted by a full-time RC&D coordinator, a USDA employee whose job is to "make things happen" in the area.

In today's economy, a good deal of attention is paid to projects that encourage investments, develop new industries, expand markets, and create jobs. Just as important to most RC&D councils, however, are those projects that produce safe drinking water, community centers, clean rivers, protected wetlands, abundant wildlife, and other community assets that are impossible to put a price tag on as far as dollar benefits are concerned. In all cases, the RC&D council itself—and not the Federal Government—decides what needs to be done in the local communities.

This is the second part of a two-part series of articles about RC&D projects that are "making things happen" across the Nation. The first part dealt with economic development, those projects that generate more dollars for rural economies. The articles in this part focus on the rest of the story: projects to improve the quality of life and conserve natural resources.

Ron Page,
national RC&D coordinator, SCS, Washington, DC

Improving the Quality of Life

Town Is Mindful of Future Water Needs

Residents of rural Charlestown, R.I., use individual wells to pump their water from beneath the ground. Their water supply may be out of sight, but it is not out of mind.

After Charlestown's population almost doubled over the past decade, town officials became concerned about the continued availability of adequate water supplies and protecting the ground water resource. They asked the Rhode Island RC&D Area Executive Council and the Southern Rhode Island Conservation District for an Environmental Review Team (ERT) evaluation of the town's ground water resources.

The ERT is a group of environmental professionals drawn together and coordinated by the RC&D council. It is made up of private consultants and specialists from universities and a variety of Federal, State, and regional agencies. Team members vary according to the nature of the review and are generally not available on municipal staffs. ERT evaluations are conducted to provide environmental information and analyses of sites for proposed land uses to assist town officials and developers in their decisionmaking.

In response to Charlestown's request, the RC&D area organized an ERT consisting of geologists, biologists, community planners, engineers, hydrologists, and other professionals. Agencies represented included the Rhode Island Department of Environmental Management, Rhode Island Water Resources Board, Rhode Island Office of State Planning, U.S. Geological Survey, and SCS.

A great deal of information about the area's ground water resources was already available but was scattered in several different publications. From these sources and reports by individual team members, the ERT determined that ground water supplies within Charlestown were indeed

limited. But they also determined that there are adequate water supplies for the entire region available in adjacent towns.

The ERT report made specific and general suggestions on how the town could prevent ground water contamination. It also gave guidance on ways to work with neighboring communities to protect the region's ground water resources.

"With a few exceptions, ground water quality in the area is very good," said Matthew Puchalski, a Charlestown Town Council member and retired soil scientist. "But the nature of the soils in the area makes the ground water very susceptible to contamination. Now is the time for us and our neighboring towns to take actions to protect our water resources for the future. The ERT report is helping us do that."

Philip J. Morneau,
public affairs specialist, SCS, Storrs, Conn.

Financing a Rural Water Project

Rural water projects are not new for southern Iowa. What is new is the way the people of Jefferson County financed theirs.

Attempts were made several years ago to finance a rural water supply for the Jefferson County area, but they met with failure. The people were statistically too rich to qualify for Federal grants and subsidized loans but too poor to finance the project at conventional mortgage rates.

This time, however, the organizers tried a new approach. They asked the Pathfinders RC&D Council for help and were able to finance the project in a way that saved money, provided more flexibility of payments, and preserved local control.

Working together, the Jefferson County Rural Water Steering Committee and the RC&D council looked at what had been done in adjacent States. They discovered that a rural water group can organize as a legal entity under a little-known and seldom-used section of the Iowa Code.

The water users then organized as a legal entity, constructed the project, and sold 10-year revenue bonds at local banks at about 3 percent below conventional

interest rates. They also saved on finance charges during construction of the project, before the bonds were sold. As a legal entity, their water district qualified for interim bank financing at a reduced interest rate as regulated by the State for municipal construction projects.

Financing through USDA's Farmers Home Administration for a period of 40 years, a common method of funding such projects, would have resulted in a total end cost about four times the initial construction cost. By selling bonds, the total cost will be less than twice the construction cost.

Dale Kraus,
RC&D coordinator, SCS, Fairfield, Iowa

Good Grounds for a Better Community Center

Highway 12 sweeps out of Camden, S.C., and cuts smoothly across the rolling mid-section of the State and the Santee-Wateree RC&D Area. About 5 miles from town is the tiny community of St. Matthews—a scattering of homes around what was once the community's school.

The St. Matthews School filled the educational needs of the community for many years until it was closed in the 1950's and the children sent to a new area school. The county education department then donated the building and grounds for use as the St. Matthews Community Center. For more than 20 years now it has provided a place where area children could go for supervised recreation.

According to Simon Engram, Jr., a postal worker who is volunteer president of the community center, time has been hard on the old school. "Over time everything had just deteriorated. The building was in bad shape and the grounds were in worse," he said. "There was no topsoil, no grass, and every time we had a rain, mud would wash down to the front door."

Erosion was so bad that several of the center's activities were suspended, and many people stopped coming. By June of 1984, Engram knew something had to be done. "Our goal has always been self-sufficiency and we have never received

any type of outside funding, but on this I knew we needed some professional help," he said.

Engram asked the Kershaw Soil and Water Conservation District for assistance, and it was there he learned about the RC&D Program. Fred McLaughlin, RC&D coordinator, and Wilfred Pace, SCS soil conservationist, worked with Engram to develop a project proposal.

Pace investigated the site and designed a plan to control erosion, revegetate the 2-acre grounds, and safely remove and dispose of excess water. The project would cost \$3,700, but 80 percent of it could be funded with RC&D funds through the Santee-Wateree RC&D Area.

"The RC&D Program made it easy," Engram said. "Through SCS we received a good plan—everything was laid out. We knew what had to be done and when it had to be done. Now it was up to us to come up with our share of the funds."

During the winter of 1984, members of the community center held bake sales, dances for young people, and solicited pledges from neighbors to raise money. By spring everything was ready to begin.

A contractor was called in to do the heavy shaping and grading for a 1,000-foot diversion. From then on most of the work was donated by cooperating organizations

and community volunteers.

The State highway department delivered 26 dumptruck loads of topsoil to the center and installed 40 feet of culvert pipe. The county Extension agent drew up a landscaping plan. A local farmer brought his tractor to spread the topsoil, and 30 volunteers went to work seeding and fertilizing the grounds. A local racetrack donated mulch.

Today, the grounds of the St. Matthews Community Center are completely protected from erosion. The once-barren land is covered with grass and trees, and kids play on a softball field where there used to be a gully.

Even Pace is amazed at the results. "I guess when a group of people get together and make up their minds to do something, anything is possible," he said. "It shows you what a little bit of money and a lot of hard work can do."

Engram agreed. "This RC&D project has been like a shot in the arm for us," he said. "And this is only the beginning. There are so many things we want to do, so many ideas, but we know we have to take it one step at a time. Our next project will be to refurbish the building itself."

David White,
public affairs specialist, SCS, Columbia, S.C.



Simon Engram, Jr., left, president of the St. Matthews Community Center, and SCS Soil Conservationist Wilfred Pace study plans for rehabilitating the community center near Camden, S.C. The center's grounds were reclaimed through a project of the Santee-Wateree RC&D Area.

Study Steers River Use

The Saco River originates in New Hampshire and flows through Maine to the Atlantic Ocean, a distance of 125 miles. Possibly the most popular river for smooth water canoe touring in New England, the Saco sustained more than 90,000 user-days in a recent season.

The river serves as a water supply for the cities of Biddeford and Saco, Maine. As recreational use of the river has grown in recent years, there has been an increase in riverfront trash and litter.

In response to requests from the States of Maine and New Hampshire, the Threshold to Maine (Maine) and North Country (New Hampshire) RC&D Councils, the Saco River Corridor Commission, local planning groups, involved soil and water conservation districts, and other interested persons formed a bi-State Steering Committee to look at the problems on the river and plan for future use.

The plan was completed in 1984 and recommendations activated almost immediately. An advisory committee was formed of local landowners (some of whom own riverfront property), representatives of canoe livery and campground owners, a volunteer from the Appalachian Mountain Club, and a representative from each of the two RC&D areas.

A river "runner" has been hired to assist canoeists on the river from Memorial Day through the Labor Day weekend—the season of heaviest use. The uniformed runner has no police powers but does provide an official presence on the river. The runner shows canoeists how to handle waste and trash, gives directions to local facilities, warns of hazards on the river, and conducts a general educational program.

The majority of the river frontage is owned by local people who allow canoeists to camp, put in their canoes, and take them out again. The landowners report a greater sense of security now that there is a committee to whom they can direct their questions and suggestions and who will act in their behalf.

Maine is using the study to determine the best locations for new campground facilities. The State has been very supportive of the advisory committee, sending representatives to meetings and offering assistance. The two RC&D councils are monitoring the progress and expect to offer further assistance as the advisory committee develops its programs.

William J. Branigan,
RC&D coordinator, SCS, Westbrook, Maine

Preserving Woodland Eases Flooding Problem

Balancing the needs of the environment against those of people sometimes causes conflict—especially when drainage is involved. But an innovative project of the Crossroads of History RC&D Council in South Carolina benefited both.

The small town of Eastover in Richland County had been experiencing increasingly severe drainage problems. "The town's old drainage system was obstructed by trees, garbage, and silt," said Tom Boney, Richland County official and RC&D councilman. "Many yards were flooded for up to 6 months out of the year." The town was facing health problems from mosquitoes and inadequate sewage disposal.

To remedy the situation, the RC&D council, Richland County, the Richland Soil and Water Conservation District, and the South Carolina Land Resources Commission worked through the Governor's office to secure \$300,000 in Community Development Block Grants. The county administered the contract, and SCS provided technical assistance.

"Basically, we were just cleaning out and expanding the old system," said SCS District Conservationist Jim Wilson.

A part of the expanded system called for a drainage ditch to be constructed through 8 acres of woodland that is wet during part of the year. If the project went through as planned, however, this habitat for many wildlife species would have been significantly altered.

"We had the easements to construct through the area," said Gene Dobbins, SCS engineer. "But we didn't want to because we wanted to preserve the natural woodland area."

"We determined the wetland area was large enough, and had enough natural flow, that we could end the drainage ditch above it," Wilson said. "At the other end we picked up with the ditch and finished the project as planned."

Not disturbing the wetland area and yet still being able to complete the project won high marks from local residents. "This RC&D program has been very valuable to the people in the Eastover area," said



Citizens in Maine and New Hampshire are concerned about future use of the Saco River, possibly the most popular river in New England for smooth water canoe touring.

Allen Dowdy, who farms near Eastover. "It has improved living standards and made Eastover a cleaner and healthier place to live."

David White,
public affairs specialist, SCS, Columbia, S.C.

Prisoners Put Farmland Back into Production

State prisoners in Maine are getting fresh vegetables after learning how to garden.

Several years ago the Time and Tide RC&D Agricultural Resource Committee became concerned about several hundred acres of idle State-owned farmland. This land had previously been farmed to provide food for inmates at the Maine State Prison at Thomaston. Since 1977, however, all of the food used at the prison had been purchased.

Led by the RC&D's Agricultural Resource Committee and Human Needs Committee, a number of agencies and individuals formed a nonprofit group called the Mid-Coast Agricultural Resource Center (MARC). This group began to work with elected officials and prison administrators to put the farmland back to work. Eventually, a project supervisor was hired through the local Manpower Council.

Workshops were held to teach the inmates how to garden. The first year about an acre was planted in gardens. The next year MARC located seeds for potatoes and other crops and old equipment at little or no cost. Hay was cut, baled, and sold, and the proceeds were used to buy better equipment.

More crops have been grown each year until, in 1985, the State Legislature provided funds for more equipment and about 45 acres were planted. The farmland now provides almost a year's supply of potatoes for the more than 400 prisoners, and the prison trades surplus squash to a processing plant for canned goods. This program has benefited inmates who want to learn about farming, and in 1985 it saved the State \$35,000 on food.

Norris D. Braley,
RC&D coordinator, SCS, Waldoboro, Maine

Conserving Natural Resources

Fresh Start at Old Problem

The Copper Basin lies in the lower Appalachians and encompasses about 60,000 acres of hills and valleys in Tennessee, Georgia, and North Carolina. For most of the past century much of the basin has been largely devoid of plant life.

In the early 1800's, exploration for minerals, primarily gold, began. During the mid-1800's, mining for copper began and, since transportation of crude ore was expensive, smelting of ore in the basin developed rapidly. This process demanded large amounts of wood for fuel and produced large amounts of sulfur dioxide.

By 1900, virtually all timber within hauling distance had been cut and all vegetation in the vicinity of the smelters had been destroyed by sulfur dioxide. High smokestacks spread the fumes in the early 1900's and, eventually, a 50-square-mile area was largely denuded and subject to erosion.

The basin is drained in Georgia by the Toccoa River—called the Ocoee in Tennessee. Millions of tons of topsoil from the area now lie in the river, three downstream lakes, and the Gulf of Mexico. Below the basin, the U.S. Tennessee Valley Authority (TVA) maintains three power-generating facilities on the Ocoee. Each has been damaged by sediment, with one reservoir having lost about 90 percent of its water storage capacity. Damage to turbine equipment has also been high. Sedimentation and concentrations of heavy metals, partially contributed by runoff from the soils high in minerals, caused this section of the river to be devoid of fish and aquatic life.

Reclamation efforts in the basin first began in the 1930's, and have been attempted by a variety of groups and organizations over the years. Most of the revegetated areas have been planted by mining companies. Early on, the Civilian Conservation Corps was involved. Other efforts have involved TVA and USDA's Forest Service. Some of the early efforts

achieved a degree of success through sheer persistence, with some areas planted three times before tree stands were established. The denuded area has been reduced to 8,600 acres.

Because only a few hundred of the affected acres are in Georgia, relatively little reclamation work has been attempted there. Soil loss is significant, though, because slopes range from 25 to 60 percent and as much as 200 tons of soil per acre erodes away each year. Much of this land is located close to the river, and eroded soil quickly becomes sediment.

The Limestone Valley RC&D Council recognized this problem and encouraged reclamation efforts. The Fannin County, Ga., Board of Education shared the council's concern and expressed interest in treating their eroding school grounds. As a result, RC&D Coordinator W.C. James, Jr., began working on a plan in 1981 to revegetate a 28-acre tract adjacent to McCaysville Elementary School. As the plan developed, the Blue Ridge Mountain Soil and Water Conservation District joined in.

The tract was almost totally unprotected, with only a few scattered, stunted trees and shrubs. Several deep gullies were present. The soils are low in fertility and highly acidic with heavy concentrations of aluminum. Virtually no topsoil was left and small rocks were common on the surface.

Recent research by the Forest Service had indicated that increased survival and growth rates of pine seedlings could be achieved by breaking up the soil to a depth of 2 feet or more (subsoiling) and placing fertilizer pellets in the soil near each tree. Other alternatives, such as shaping and seeding to grasses, in addition to tree planting, could have led to more rapid erosion control but were prohibitively expensive.

By late summer of 1982, contour subsoiling was underway under the supervision of SCS Technician George Daves and District Conservationist Jimmy Taff. Plans called for the area to be ripped or subsoiled on 4-foot centers, 3 feet deep. In early 1983, after the subsoiled earth had been given time to settle, a five-man crew handplanted improved loblolly pine

seedlings 4 feet apart in each rip. As the seedlings were planted, a fertilizer pellet was placed in dibble holes next to each tree. The root systems of the planting stock had been treated with a water-holding gel that helped the tender root systems withstand an extended dry period that occurred during their first growing season.

Early in the spring of 1984, six sample plots were established at random over the 28 acres. The average tree height was slightly over 18 inches, the average diameter at the base was almost 5 8 inch, and the survival rate 92 percent.

One year later, when the trees were remeasured, the height averaged 30 inches, an increase of 66 percent. The average diameter had increased to about 3/4 inch, an increase of about 20 percent. The survival rate dropped to 88 percent, but this is still higher than is often found on good sites. For the first time there are significant amounts of natural grasses and herbaceous material on the site. Forest litter is also beginning to build, and it is estimated that canopy cover is approaching 35 percent of the area.

The success of this treatment has led to plans for reclaiming the remaining Georgia portion of the basin and other critical areas across the State. Where practical, areas will be seeded with grass-legume mixes to provide quicker erosion control, but the basic long-term treatment for such areas in the future will likely combine fertilization, subsoiling, and tree planting.

Gary L. Tyre,
State forester, SCS, Athens, Ga.

Ronald G. Barton,
RC&D coordinator, SCS, Gainesville, Ga.

Birds, Bees, and Other Wildlife

Rural Indiana has undergone dramatic changes over the past 50 years that have had a direct effect on wildlife populations. Once, small farms with small fields cloaked in mixed grains, pasture, hay, and woodlands created a patchwork of ideal wildlife habitat. Today, fields of corn and soybeans often stretch from road to country road, and huge irrigation systems crawl across the sand ridges. The wildlife that remains is confined to idle State lands, river bottoms, drainage ditches, and a few isolated woodlots.

Perhaps no animal better represents the plight of wildlife in rural Indiana than the eastern bluebird—a summer visitor considered by many to be a traditional sign of happiness. The bluebird had the misfortune of a lifestyle directly intertwined with the wooden fencepost. Once, there were millions of wooden fenceposts that provided enough suitable nesting cavities to make bluebirds a common sight, flitting about the countryside eating insects. Today, the fenceposts are steel, corn and soybeans grow where cattle grazed, and bluebirds are scarce.

In an effort to attract bluebirds back to northwestern Indiana, the residents of Pulaski County last year began building and erecting nesting boxes. This effort was coordinated by the Wildlife Committee of the Arrow Head Country Resource Conservation and Development (RC&D) Area.

The Winamac Conservation Club, the Winamac Post of the Veterans of Foreign Wars, and the Indiana Department of Natural Resources donated money to buy enough western redcedar lumber to build 500 bluebird houses. A total of 30 volunteers then offered to serve as carpenters, and sawdust soon began to accumulate in their basements, garages, and home workshops.

Locating sites and erecting the houses near suitable bluebird habitat was the next major hurdle. In a short letter to the trustees of all 12 townships in the county, the committee offered 40 bluebird boxes to each township. It asked for—and received—their assistance in locating

suitable sites, cooperative landowners, and youth groups or neighborhood children to install the boxes. Hundreds of people turned out to help, and by April 1985 all of the boxes had been erected.

Another of the many wildlife projects of the RC&D Area, which encompasses Kosciusko, Marshall, Fulton, White, Pulaski, Starke, Jasper, and Newton Counties, is an annual beekeeping clinic. More than 50 beekeepers attended the first clinic in 1984. A wildlife biologist who manages several hives discussed bee biology, the value of pollinators, the pollination process, honey production, chemical hazards, and the construction of hive boxes. A beekeeper from Francesville opened an active hive, pointed out the queen bee, and discussed equipment, swarming, and honey marketing. Interest was so great that the committee immediately began planning a second clinic, and a third is scheduled for this year.

According to Ray Haschel, committee chairman, many of those who attended the clinics were hobbyists who have since gone on to become commercial honey producers. "To measure the success of any clinic," said Haschel, who is a soil conservation technician with the Winamac SCS field office, "count the number of people it spurs to action."

At least six people who attended an RC&D pond tour took immediate steps to renovate their ponds. The tour featured a State fishery biologist who demonstrated how to eradicate all the fish from a farm pond and explained why total fish removal and restocking is necessary to turn a pond into a productive fishery. He also demonstrated the use of a "shocker" boat that temporarily immobilizes fish by electric shock so that they can be examined to determine growth rates and the ratio of species. In addition to providing recreation, a well-managed pond and the adjacent habitat benefit hundreds of wild animals.

Many residents of rural northwestern Indiana depend on trapping for income. According to Haschel, a good ditch or marsh can yield \$30 to \$100 an acre in muskrat, mink, or racoon pelts. Removing muskrats can also add several maintenance-free years to the life of a

pond or ditch and reduce downstream sediment.

About 100 people attended a trapping clinic sponsored by the Wildlife Committee at the Jasper-Pulaski Fish and Wildlife Area. The clinic stressed the legal and ethical responsibilities of trappers. Subsequent clinics will feature more hands-on demonstrations and contests.

The committee prepares a semiweekly newspaper column—complete with cartoon illustration—entitled "Creature Features." Although these 250-word features are geared for young people, careful research ensures that the information about wildlife is accurate and reliable.

The committee plans to sponsor a natural resources field day for the estimated 400 children enrolled in 4-H wildlife, forestry, and soil conservation projects in the area. Another project in the planning stage is the preparation of a natural resources instructional packet for school teachers in the area.

Wayne Machan,
program specialist, public affairs unit, Division of Fish and Wildlife, Indiana Department of Natural Resources, Indianapolis, Ind.

Adapted with permission from an article in the July/August 1985 issue of *Outdoor Indiana*.

Park Visitors See Conservation in Action

An RC&D measure in Crawford County, Pa., is protecting an endangered peninsula and showing land users how to control shore erosion.

A peninsula of Pymatuning State Park juts into the 14,500-acre Lake Pymatuning on the Pennsylvania-Ohio State line. The park attracts as many as 90,000 visitors a day, and thousands enjoy hiking and fishing on the peninsula itself.

Back in the 1970's the park's peninsula was eroding at a rate of 10 to 15 feet annually and faced total obliteration within 10 years. Something had to be done to protect the many popular hiking, picnicking, and fishing spots in Pymatuning State Park. Help was sought from the Penn Soil RC&D Area.

The State park superintendent, the SCS district conservationist, and the RC&D coordinator planned a course of action. They decided not only to treat the critical erosion problems on the peninsula but also to create a demonstration area to show visitors the various methods available for protecting the rest of the lake's 70 miles of shoreline. A single storm can sometimes remove 20 feet of land.

Starting in January 1980, a variety of erosion-control methods were installed. Sections of the shoreline were protected with large rock, concrete-filled fabric, rock-filled gabion baskets, aluminum sheet pilings, and willow plantings.

"All methods have worked effectively," said Carl Pelino, SCS district conservationist. "The shore recession has been stopped, and the peninsula will be protected indefinitely."

Fishermen find the demonstration area offers good spots for shore fishing. More important to SCS, however, is its value for demonstrating to park visitors—whether or not they own waterfront property—alternative methods for long-term erosion control.

Frederick E. Bubb,
public affairs specialist, SCS, Harrisburg, Pa.

Shop Students Build Nesting Boxes

Wood ducks in Piedmont North Carolina once nested in cavities made by ivory-billed and pileated woodpeckers in large dead trees. But the ivory-billed woodpecker is now nearly extinct, and today's farming and forestry practices keep forests from becoming overmature and littered with dead trees. As a result, the cavities suitable for nesting have become scarce and so have the wood ducks.

To increase the population of wood ducks, the Wildlife Committee of the North Central Piedmont RC&D decided to provide suitable nesting structures. The committee wanted to build wood duck nesting boxes that are easy to erect, long lasting, and affordable. After studying various types of wood duck boxes and construction plans, the committee decided to make the boxes out of cypress.

The vocational agriculture department at Western Alamance High School joined the project. The students now work in the shop for 2 to 3 weeks each year to make the boxes. During this time, they learn to grade, measure, and cut the wood with simple shop tools and power tools.

The shop project operates like an assembly line, with students advancing from one stage to another until all parts have been cut out. They then assemble the cypress pieces using galvanized nails and following specified procedures.

The Wildlife Committee furnishes all the materials for the project and sells the boxes. Thus far more than 2,860 wood duck boxes have been produced, and the students themselves have installed 125 boxes in three watersheds. These boxes should help replace the only missing element of wood duck habitat in the Piedmont, the cavities in large dead trees.

J.W. Busick,
chairman, Wildlife Committee, North Central Piedmont RC&D Area, Gibsonville, N.C.

News Briefs

Surge Irrigation Guide to be Published

The Soil Conservation Service will soon issue a new guide for assisting farmers with surge irrigation, a relatively new way of flood-irrigating furrowed cropland.

The new guide will supplement the general irrigation guide available to SCS field offices. It is designed to help land-owners decide if surge irrigation is appropriate for their operations and, if it is, how it should be managed.

Surge irrigation works by the use of special valves that send surges of water down the furrows at specified intervals. On many soils, water can be more evenly distributed by surges than by a steady flow. With steady-flow systems there is a tendency for more water to saturate into the soil at the upper end of the furrows, where it is applied, and for less water to reach the lower end.

The advantages of surge irrigation can include savings of water, energy, and fertilizer. If properly designed and managed, it can reduce water pollution. The disadvantages include the cost of the equipment and the higher level of management required.

Some form of furrow irrigation is used on 70 percent of the land irrigated in the United States. Most of the requests SCS receives for assistance with surge irrigation come from farmers in Texas, Oklahoma, Kansas, Nebraska, and Colorado.

SCS engineers and soil scientists developed the new guide with assistance from scientists from USDA's Agricultural Research Service, university researchers, water district specialists, consultants, and surge equipment manufacturers. In conjunction with the new guide, SCS has issued a brochure, "Surge Irrigation," that provides general information about the practice.

Swayne F. Scott,
national irrigation engineer, SCS, Washington, DC

TVA Launches Journal

The Tennessee Valley Authority has announced publication of a new journal, *Forum for Applied Research and Public Policy*. According to the editor, Alanson Van Fleet, it is being published "to help focus attention and stimulate discussion on policy issues related to energy, economic development, and the wise use of natural resources. "The journal will carry articles on policy-related research from the Nation's universities, research centers, private companies, and public offices," Van Fleet said. "Manuscripts will be reviewed by an independent panel prior to acceptance for publication."

The first issue of the quarterly journal carries an exchange of articles on soil erosion. Donald Worster, author of *Dust Bowl: The Southern Plains in the 1930's* and chairman of the graduate program in American history at Brandeis University, opens the exchange "by exploring the root causes of America's inability to overcome its soil erosion problems."

According to the editor's introduction, "Mr. Worster contends the Nation's market-oriented economy has devalued our sense of the soil's life-giving properties, and has caused us to abuse this vital resource. He argues that the Soil Conservation Service, created in response to the economic and resource crises of the Great Depression, soon became entrapped by the value system that was responsible for soil erosion problems in the first place. As a result, SCS officials began to offer technological solutions to political and cultural problems."

A response to Worster is offered by Norm Berg, former SCS Chief and a senior advisor with the American Farmland Trust. According to the editor, Berg argues that "contrary to Mr. Worster's contention, the SCS has done an admirable job, and points with pride to the agency's environmental record. Second, he contends that public institutions, if they are to be effective, must work within the political boundaries set by a society's enduring principles, and in our case those principles are the individual pursuit of wealth and the sanctity of private property."

Another environmental issue covered in this first issue of *Forum* is that of ground water. The articles in this section are:

- Ground Water Policy: A Need for Federal Participation by David Durenberger.
- Ground Water Quality: The State of the Tennessee Valley Region by Bevan W. Brown.
- Technological Solutions to the Problem of Leaking Underground Storage Tanks by Austin M. Snow, Jr.
- Underground Storage Tanks: A Note by John S. Crossman.

Subscriptions to the *Forum* are \$20 per year. They may be obtained by writing the *Forum for Applied Research and Public Policy*, P.O. Box 1750, Knoxville, Tenn. 37901-1750.

Save-a-Trip, Save Soil

The Iowa Soybean Association has begun a "Save-a-Trip" program to show Iowa soybean farmers how to increase soil protection and decrease production costs at the same time. Through the program, farmers cut out one tillage operation on soybean fields that they are rotating into corn production.

Participating farmers divide a field into two sections. They treat one section as usual. On the other section they cut out at least one tillage operation (saving one trip across the field). Yields will be checked on each plot, and data will be analyzed and published.

"Farmers presently using reduced tillage practices on their soybean stubble are also being encouraged to participate. Even if no comparison plot is available, their experience will provide information for other participants," said Ben Kern, Warren County farmer and president of the association. "We're encouraging people who have already cut some trips out to look for even more soil and fuel savings with no-till or ridge-till."

According to Kern nearly 400 farmers have enrolled in the program since it began in the fall of 1985. By eliminating one major tillage operation, he said, the farmers should save fuel, labor, and

equipment costs. The soil conservation benefits include reduced exposure of the soil to wind and water erosion.

Jody Christiansen,
information intern, SCS, Des Moines, Iowa

Miniatures Help with Shelterbelt Planning

Some tiny artificial trees are having a dramatic effect on how farmstead shelterbelts in Minnesota will look in the future. University of Minnesota's Agricultural Experiment Station forest resources researcher Harold "Scotty" Scholten started setting scale-model, artificial trees out in snowstorms in the winter of 1984-85 to measure snowdrift patterns.

"Our results were dramatic. We discovered that we've been putting the shrub row in the wrong location throughout the history of Minnesota shelterbelt plantings," Scholten said. In the past, the shrub row was located on the windward side, adjacent to the outside tree row. This was a major cause of snow damage to inside rows of shelterbelt trees. "We need to improve the design of Minnesota shelterbelts," said Scholten.

"Today, we have fewer farmsteads, woodlands, and fence lines and larger expanses of open fields," Scholten said. "With fewer obstacles to slow down cold winter winds and blowing snow, today's farmsteads are islands in a sea of open fields. That means we need farmstead shelterbelts more than ever before. Farmers who have a shelterbelt say they wouldn't do without it."

Shelterbelts planted in the twenties and thirties have either been removed or have deteriorated so that they no longer provide maximum protection. And "belts" planted in the forties and fifties are in early stages of deterioration. Problems with shelterbelt trees dying are the direct result of planting the trees too closely. And the older the belt, the closer the spacing.

Scholten has been studying snow distribution patterns, snow damage, and degree of deterioration in shelterbelts since 1978. He has also studied species arrangements and spacings to try to

determine what shelterbelt design would eliminate snow damage and provide maximum protection and enjoyment for several generations of farm families.

Scholten got the idea of using scale-model shelterbelts of artificial trees for his research from a story about a highway research project on snow fence in Wyoming. "They were using lath to scale and setting them out on a lake to measure snow protection," he said. The day after Christmas, he and his wife went shopping for half-price, miniature artificial trees and shrubs to use in his own research project.

He set the model farmstead shelterbelts (mounted on plywood) out in open fields at the university's Rosemont Agricultural Experiment Station. Ideal wind velocities for his study are about 30 miles per hour. With this wind speed, it takes about 45 minutes for snowdrifts to form a typical pattern. The coldest part of the job? "Lying on your stomach to take pictures of the snow patterns," he answered.

Ohio State Begins Conservation Tillage Program

The Ohio State University (OSU) at Columbus recently began an interdisciplinary program to improve conservation tillage systems. The new program pulls together specialists from OSU's School of Natural Resources and College of Agriculture.

The program began in March under the leadership of Berlie L. Schmidt, who left his position as chairman of the agronomy department to head up the new effort. It is designed to improve crop production efficiency and answer environmental questions about conservation tillage.

Any tillage or planting system that retains at least a 30 percent residue cover on the soil surface after planting will be considered conservation tillage, Schmidt said. This will include such practices as no-till, chisel plowing, and ridge-till.

Schmidt said the different specialists will be working together to improve both farmer profitability and soil and water conservation. "As financially stressed as

farmers are right now," he said, "these systems have to be economical and profitable as well as good for the environment."

In addition to OSU faculty members and facilities, the program will rely on the USDA's watershed experiment station in Coshocton County, Ohio. The Coshocton lab, which was established in 1935 in cooperation with the Soil Conservation Service and later transferred to the Agricultural Research Service, will be especially useful to the program, Schmidt said, because of its watershed measurement capabilities.

Natural resource specialists at OSU will study the effects of chemicals and sediment on the environment. Entomologists will be concerned about the potential for more and different kinds of insect problems when more residue is left on the soil. Plant pathologists will study crop diseases. Agronomists will work on developing plants and planting systems that will be efficient and still conserve soil and water. Horticulturists will study the effect of erosion on large-scale vegetable production. Agricultural engineers will work on developing new or improved tillage equipment.

A planning group for the program consists of representatives from the different academic disciplines. Other OSU departments—as well as organizations outside the university—can be brought into the program, Schmidt said, if there is a need for more expertise.

Moving?

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Washington, DC 20013-2890

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New Publications

Cost Data for Landscape Construction, 1986

by Kerr Associates, Inc.

The seventh edition of this book has been updated to reflect current costs and methods that can be used for setting budgets, estimating project costs, and evaluating bids for landscape development.

The information in the book is designed for use primarily by designers and cost estimators for preparing cost estimates for competitively bid projects such as parks, subdivisions, office parks, or residential landscapes. Specialized procedures like soil mixing, fertilizing, seeding, sprigging, watering, and other greenscape work items are reported in depth. The planting section contains the results of a national survey of plant materials prices conducted especially for this edition. High, low, and average prices for many species and varieties of trees, shrubs, and ground covers are provided.

Cost Data for Landscape Construction, 1986 is available for \$33.50 from Kerr Associates, Inc., 1942 Irving Avenue South, Suite 100, Minneapolis, Minn. 55403.

Anatomy of a Park: The Essentials of Recreation Area Planning and Design

by Donald J. Molnar,
with Albert J. Rutledge

This book is for nondesigners—members of park boards, park directors and supervisors, recreation leaders, and the general public. It explains how to evaluate the esthetic success or failure of park development, describes the functional considerations and demands, and examines the site design process. Emphasis is placed on the monetary factors of

park development and design which reflect current financial concerns.

Many drawings and plans are used throughout to clarify and amplify key points. Seven appendices provide helpful data and information on such aspects as a recreation needs survey, selected game area size standards and layout diagrams, responses of selected trees to recreation use, and responses of selected soil types to recreation use.

This 190-page book is complete with a bibliography and an index.

The second edition of *Anatomy of a Park: The Essentials of Recreation Area Planning and Design* is available for \$39.95 from McGraw-Hill Book Company, 1221 Avenue of the Americas, New York, N.Y. 10020.

Planning a Community Center

Prepared by Stuart H. Huntington

Planning a well-designed community center that suits the needs of the citizens is a complex undertaking. This publication provides guidelines on getting organized, including how to attract extensive citizen participation and how to maximize the facility's use and minimize costs.

This 28-page booklet is available for \$1.40 from Publications Distribution, Iowa State University, Ames, Iowa 50011.

Erosion and Sediment Control Handbook

by Steven J. Goldman, Katharine Jackson, and Taras A. Burzstynsky

"When land is disturbed for construction, road building, mining, logging, or other activities, the soil erosion rate increases from 2 to 40,000 times. Millions of tons of this soil end up in our rivers, lakes, and reservoirs." These statements are from a comprehensive how-to-do-it guide on how to prevent or

greatly reduce erosion by proper planning and by using simple, low-cost control measures. This guide is designed for a variety of readers including engineers, architects, landscape architects, planners, and others responsible for preparing site plans. Review questions and sample problems have been included, so the guide may also be used as a college textbook.

The book is divided into 10 chapters, each describing a major subject area of erosion control. Some of the information covered in these chapters are erosion control problems and causes, strategies for preventing erosion and trapping sediment, specifications for designing and installing control measures, and developing an erosion and sediment control plan for a site. Photographs, illustrations, charts, and tables are used throughout the book for added detail.

This 454-page book is available for \$62.50 from McGraw-Hill Book Company, 1221 Avenue of the Americas, New York, N.Y. 10020.

North American Range Plants

by J. Stubbendieck, Stephan L. Hatch, and Kathie J. Hirsch

This book was developed as a primary resource for studying important range plant species. It is especially useful to ecologists, range managers, land managers, college students, and members of range plant identification teams. The selection of the 200 species in this book was based on their abundance, desirability, or noxious properties.

Plant descriptions include characteristics for their identification, a drawing of the plant or enlarged plant parts, and a general distribution map for North America. Each species description includes nomenclature; life span; origin; season of growth; and inflorescence, flower or spikelet, vegetative, and growth characteristics. Forage value is estimated

along with brief notes on habitat; livestock losses; and historic, food, and medicinal uses.

In addition to a glossary, this book includes a list of selected synonyms, list of authorities, and list of selected references.

This 465-page book is available for \$18.95 from University of Nebraska Press, 901 North 17th, Lincoln, Nebr. 68588.

Encyclopedia of Community Planning and Environmental Management

by Marilyn Spigel Schultz
and Vivian Loeb Kasen

This book lists alphabetically some 2,000 terms used in community planning. The information is presented in short, clear, readable definitions and descriptions. Understanding these terms is essential to understanding the ways in which land is developed, regulated, and protected.

Some of the major subject areas are: land use regulation, transportation, housing, planning techniques and tools, recreation, economic development, federal programs, census applications, and the legal aspects of planning.

This 475-page encyclopedia also contains a list of acronyms and their meanings and over 50 illustrations and diagrams. Extensive cross-references at the ends of definitions guide the reader to related entries.

Professional planners, architects, students, and those who work in related professions will find this a valuable reference.

The encyclopedia is available for \$45 from Facts on File, Inc., 460 Park Avenue, South, New York, N.Y. 10016.